Research Paper

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Nutritional and morbidity profile of children aged 2-5 years attending Anganwadi at urban slum areas of Jamnagar city

Medical Science

KEYWORDS : Anganwadi, Malnutrition, Morbidity, Nutrition

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ABSTRACT

Nutritional and morbidity profile of children aged 2-5 years attending Anganwadi at urban slum areas of Jamnagar city.

Introduction: As under-five children are more vulnerable to malnutrition, infection, this study was conducted with objectives: to measure the nutritional status, to find out the morbidity profile, to measure the burden of malnutrition and identify the factors associated with malnutrition.

of children aged 2-5 years attending Anganwadi centres.

Methods: A cross sectional study conducted during August-December 2010 in Anganwadis of urban slum areas of Jamnagar city.

Result: 50.2% children were malnourished according to IAP classification, 48.7% had stunting and 14.2% had wasting. Malnutrition was more prevalent in female children. Majority of children were having Pallor and Respiratory tract infection (RTI).

Conclusion: Malnutrition should be addressed by nutrition counselling, generating community awareness, sanitation, improvement of literacy status, availability and utilization of child health care services.

Introduction:

Anganwadi comes under ICDS Scheme which was initiated by the Government of India in the ministry of social & women's welfare in 1975. The services comprise of supplementary nutrition, immunization, health check up, medical referral services, nutrition and health education for women and non-formal education of children of aged 3-6 years and pregnant & nursing mothers in rural, urban and tribal areas. (1) "Angan" literally means Courtyard. (2) Anganwadi is a child-care centre located within the village or the slum area itself. It is the focal point for the delivery of services at community levels to children below six years of age, pregnant women, nursing mothers (15-45yrs of age) and adolescent girls. Each Anganwadi is run by an Anganwadi Worker (AWW) supported by a helper who provide integrated service delivery and improved linkages with the health system-thus increasing the capacity of community and mothers-for child care, survival and development. (3) Children are the backbone of any country and their health is of prime concern. Under-five children is vulnerable group. Vicious cycle of malnutrition and infection increases morbidity and mortality of this age group. So, this study was conducted in urban slum area with the following objectives.

1. To measure the nutritional status of children aged 2-5 years attending anganwadi centres at urban slum areas of Jamnagar city.
2. To find out the morbidity profile of above mentioned children.
3. To measure the burden of malnutrition and identify the factors associated with malnutrition.

Methodology:

A cross-sectional study was conducted in Anganwadis of urban slum areas of Jamnagar city during August- December 2010. Out of 17 wards in urban areas, 2 anganwadis were selected from each ward and from one large ward 3 anganwadis were selected accounting for 35 anganwadis. Sample size was calculated by using formula $4pq/l^2$. Here, prevalence of malnutrition (p) =50, q= p-1, relative error l=5% and non-response rate of 10% were taken. Thus sample size of 440 was calculated, which was rounded off to 450. 13 children were selected from each Anganwadi by Systemic Random Sampling. (4) Socio demographic data and information regarding history of illness in last six months were gathered by using predesigned and pretested questionnaire after obtaining oral consent from their parents and Anganwadi authorities followed by Physical examination which included Height, Weight and Mid-arm circumference. Weight was measured to the nearest 0.1 Kg using Salter weighing machine. Height was measured against a non-stretchable measure-tape fixed to a vertical wall, with the participant standing on a firm/level surface and it was measured to the nearest 0.5 cm. The children were dressed in light underclothing and without any shoes during the measurement. Each measurement was done twice, and the mean of the two readings was recorded. Mid upper arm circumference was measured at the midpoint between the Acromion process of the Scapula and Olecranon process of the Ulna in the left hand using Shakir's tape. Reading was noted to the nearest 0.1 cm. Weight for age was taken as criterion for malnutrition as per Indian Academy of Paediatrics (I.A.P.) classification. The new WHO child growth standards, generated for boys and girls, aged 0-60 months, Z score curves were used to assess the nutritional status. Z score below 2 SD for Height for age was considered as Stunting and Z score below 2 SD for weight for height was considered as Wasting. Data entry and analysis were done in Microsoft excel 2007and relevant statistical tests were applied.

Results:

Out of 450 children, 51.1% children were males and 48.9% were females. Regarding age distribution, 40.2% children were of 49-60 months of age group followed by 34.6% in 37-48 months and 25.11% in 25-36 months age group. 76% of children were Hindu and the rest were Muslims. Regarding Socio-economic status, 80% children belonged to class IV and V according to modified B.G. Prasad's classification. 36.6% of children's fathers were educated up to primary level followed by 31.1% up to secondary level. 41.3% of mothers were uneducated and 39.3% were educated up to primary level. Regarding occupation, 74.2% of children's fathers were labourers. 90% of children's mothers were housewives and 9.33% were labourers and a few were doing a job or self-employed.

As shown in Table-1, according to IAP classification, 49.8% children were normal, 30.0% children were in Grade-I malnutrition, 17.6% in grade-II and 2.2% in grade III. 48.7% children had stunting, 14.2% children had wasting and 50.2% were undernourished. Based on the Mid Upper Arm Circumference (MUAC), 61% children had MUAC more than 13.5cms.(normal) 37.00% children had MUAC between 12.5-13.5 cms.(mild and moderately malnourished) and 2.0% children had MUAC <12.5 cms.(severely malnourished).

Table-2 shows statistically significant association between Sex and malnutrition grade of the children. Malnutrition was more prevalent in female children than male children. More than three forth of female children were in Grade-II and Grade-III of malnutrition.

Table-3 shows morbidity profile of the children. 58.6% children had pallor and 53.1% had upper respiratory tract infection.

As shown in Table-4, on observing relationship of malnutrition with education of mother, 51.6 % children of illiterate mother were malnourished as compared to 27.3% educated mother.58.8 % children of illiterate father were malnourished as compared to 43.2 % educated father.

When we look at personal hygiene including hair(uncombed and untidy), nails(uncut and dirty), clothes(dirty),hands, feet and gums(dirty) and tongue(untidy) and teeth(with carries). 41.01 % female children had poor personal hygiene compared to 36.21% male children. On observing poor practices related to personal hygiene like hand washing at anganwadi before eating, hand washing before meals at home, hand washing after toilet and toothbrush, poor practices were observed in 45.54% female children compared to 26.92 % male children.

Discussion:

Present study shows that according to IAP classification prevalence of malnutrition in Grade-I was 30%, Grade-II - 17.6% and Grade-III - 2.2%. In a study conducted by Vijayashree, according to IAP classification prevalence of malnutrition in Grade-I was 47.10%, Grade-II - 10%, collectively Grade-III and IV was 1.40%. (5), Whereas in a study conducted at Vadodara city, prevalence of malnutrition according to IAP classification was 40.5% for grade I, 20.1% for grade II and 2.3% for grade III. (6). These findings highlights more number of children were in Grade-I malnutrition. In this study by MUAC 37.0% children were mild and moderately malnourished. Similar findings i.e. 27.2% malnourished children were found in a study conducted in a rural area in Faridabad district. (7). Under nutrition is a very complex problem. Many factors are responsible for it like, socio-economic factors, cultural factors, urban-rural settings, purchasing power, health seeking behaviour. In present study, 48.7% children had stunting, 14.2% children had wasting and 50.2% were undernourished. According to NFHS-III data, (8), 40%, 45% and 23% children< 3 years of age were underweight, stunted and wasted respectively. In a study of Tamoghna Biswas (9), 64.9% of the study population were underweight (25.7% being severely underweight), 20.3% had wasting (4.1% being severely wasted), and 64.9% were stunted (43.2% being severely stunted). This data suggests that stunting and underweight is widely prevalent.

In this study statistically significant association between sex of the children and malnutrition grade was found. Majority of female children were in grade-II and Grade-III. This might be due to poor care and child rearing practices for girl child. More than half of children had pallor and suffered from Upper respiratory tract Infection (URTI). More than one forth children suffered from worms. This might be due to urban slum area, where sanitary conditions and personal hygiene were poor and also neglect of medical care seeking. In a study conducted by Narkhede Vinod, highest prevalence of morbidity found was anaemia (78.7%). (10) Education of parents affects family rearing practices and thus health of the children. As in present study malnutrition was more in children of illiterate parents.

Conclusion and Recommendations:

Malnutrition and infection make vicious cycle. Malnutrition affects children's physical and mental abilities. Malnutrition in infancy and early childhood leads to stunting. Therefore to address problem of malnutrition, prevention and treatment of infection is also important. Counselling of mothers regarding exclusive breast feeding for 6 months, proper complementary feeding practices, non-expensive, culturally acceptable and locally available food, seeking medical care in case of illness as early as possible, immunization are necessary. Food taboos and cultural beliefs regarding child rearing practices should be addressed.

Tables:

Table-1: Nutritional profile of children

Nutritional profile		Frequency
Malnutrition according to IAP classification	Grade-I	135 (30.0%)
	Grade-II	79 (17.6%)
	Grade-III	10 (2.2%)
	Grade-IV	0
Stunting		219 (48.7%)
Wasting		64 (14.2%)
Under nutrition		226 (50.2%)

Table-2: Association between sex of the children and Nutritional status (N=450)

Nutritional status	Male (%)	Female (%)	Total	Statistical Interpretation
Malnutrition (IAP)				
Normal	56.5	43.6	226	χ^2 =16.775, df=3, p=0.008
Grade-I	52.6	47.4	135	
Grade-II	34.2	65.8	79	
Grade-III	20	80	10	

Table-3: Morbidity profile of children (#)

	Male	Female
Pallor	116 (25.8%)	148 (32.9%)
Worms	73 (16.2%)	70 (15.6%)
Diarrhoea	38 (8.5%)	39 (8.7%)
Ear discharge	3 (100.0)	0(0.0%)
Skin problems	26 (5.6%)	22 (4.9%)
Nasal discharge	131 (29.1%)	108 (24.0%)
Fever	42 (9.3%)	40 (8.9%)

Multiple responses

Table-4: Association between Malnutrition of child and Literacy status of parents

Education	Normal (%)	Total Malnourished (%)	Statistical Interpretation
Mother			
Illiterate	48.4	51.6	c^2 = 2.674; df = 3; p = 0.4447
Primary	49.7	50.2	
Secondary	52.6	47.4	
Higher secondary and above	72.7	27.3	
Father			
Illiterate	41.2	58.8	c^2 = 5.693; df = 3; p = 0.1134
Primary	53.9	46.1	
Secondary	50.0	50.0	
Higher secondary and above	56.8	43.2	

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